WHAT IS CLAIMED IS:

1. An internal combustion engine comprising:

an engine body including a cylinder head and a cylinder block;

a regenerator that accumulates heat;

a circulation system that circulates a heat medium;

a cylinder head part channel that circulates the heat medium in the cylinder head;

a cylinder block part channel that circulates the heat medium in the cylinder block;

a connecting channel that connects the cylinder head part channel with the cylinder block part channel;

a heat supply device that supplies heat accumulated by the regenerator through the heat medium in the circulation system; and

a restraining device that restrains circulation of the heat medium in the connecting channel when the heat is supplied by the heat supply device or the internal combustion engine is under cold conditions.

2. An internal combustion engine comprising;

an engine body including a cylinder head and a cylinder block;

a regenerator that accumulates heat;

a circulation system that circulates the heat medium;

a cylinder head part channel that circulates the heat medium in the cylinder head;

a cylinder block part channel that circulates the heat medium in the cylinder block;

a connecting channel that connects the cylinder head part channel with the cylinder block part channel;

a heat supply device that supplies heat accumulated by the regenerator through the heat medium in the circulation system; and

a circulation direction restraining device that restrains circulation directions of the heat medium in the connecting channel.

3. An internal combustion engine according to claim 2, wherein the circulation

direction restraining device restrains circulation of the heat medium from the cylinder head to the cylinder block.

4. An internal combustion engine comprising:

a regenerator that accumulates heat;

a circulation system that circulates the heat medium;

a heat supply device that supplies heat accumulated by the regenerator through the heat medium in the circulation system;

a heat exchanger that lowers the temperature of the heat medium; and

a connecting restraint device that restrains circulation of the heat medium into the heat exchanger when the heat is supplied by one of the heat supply device and the internal combustion engine is under cold conditions.

5. An internal combustion engine according to claim 4, wherein the heat exchanger is a heater for a vehicle compartment.

6. An internal combustion engine according to claim 4, wherein the connecting restraint device is a thermostat which opens when the temperature is equal to or more than a predetermined temperature.

7. An internal combustion engine according to claim 4, wherein the connecting restraint device is a pressure-sensing valve which opens according to a differential pressure of the heat medium flowing before and after the connecting restraint device.

8. An internal combustion engine according to claim 4, wherein the connecting restraint device is a one-way valve which opens when the valve receives pressure in a predetermined direction.

9. An internal combustion engine according to claim 4, wherein the connecting restraint device is a electromagnetic opening and closing valve.

10. An internal combustion engine comprising:

a regenerator that accumulates heat;

a circulation system that circulates the heat medium;

a heat supply device that supplies heat accumulated by the regenerator through the heat medium in the circulation system;

a bypass channel that connects an inlet side the internal combustion engine with an outlet side of the internal combustion engine;

a temperature controller that reintroduces the heat medium circulated into the internal combustion engine when the internal combustion engine is under cold conditions through the bypass channel; and

a connecting restraint device that restrains circulation of the heat medium into the bypass channel when heat is supplied by the regenerator.

11. An internal combustion engine according to claim 10, wherein the connecting restraint device is a thermostat valve which opens at temperatures no lower than a predetermined temperature.

12. An internal combustion engine according to claim 10, wherein the connecting restraint device is a pressure-sensing valve which opens according to a differential pressure of the heat medium before and after the connecting restraint device.

13. An internal combustion engine according to claim 10, wherein the connecting restraint device is a one-way valve which opens when the valve receives pressure in a predetermined direction.

14. An internal combustion engine according to claim 10, wherein the connecting restraint device is a electromagnetic opening and closing valve.

15. An internal combustion engine comprising:

a regenerator that accumulates heat;

a circulation system that circulates the heat medium;

a heat supply device that supplies heat accumulated by the regenerator through the heat medium in the circulation system;

a bypass channel that connects an inlet side the internal combustion engine with an outlet side of the internal combustion engine; and

a temperature controller that reintroduces the heat medium circulated into the internal combustion engine when the internal combustion engine is under cold conditions through the bypass channel,

wherein the bypass channel includes the regenerator.